Management of Opioid Dependence in Pregnancy

Jessica Young, MD MPH
Assistant Professor
Department of Obstetrics and Gynecology
Vanderbilt University Medical Center
Disclosures

• I have no conflicts of interest to disclose.
Objectives

- We will discuss and explore the:
- prevalence of opioid use in pregnancy
- risks of chronic opioid use in pregnancy
- Treatment options
- Pregnancy management for these women
- Pain management during labor and delivery
- Postpartum issues
A brief history of Opioids

“Presently she cast a drug into the wine of which they drank to lull all pain and anger and to bring forgetfulness of every sorrow.”

- *The Odyssey*, Homer, 9th Century BC

- Sumerians cultivated poppies ~ 300 BC
- Arab traders brought opium to India and China ~700 AD
- Manuscripts document addiction in Europe and Middle East ~ 1500 AD
- Morphine isolated in 1806
- Heroin produced in 1898 and thought to have no addictive properties.
Opiate addiction in pop culture
Controlled Substances in TN

- The top three most prescribed controlled substances in Tennessee in 2010 are:
  - 275.5 million pills of hydrocodone (e.g., Lortab, Lorcet, Vicodin)
  - 116.6 million pills prescribed for alprazolam (e.g., Xanax: used to treat anxiety)
  - 113.5 million pills prescribed for oxycodone (e.g., OxyContin, Roxicodone)

Source: Report to the 2011 107th General Assembly by the Tennessee Department of Health Controlled Substance Database Advisory Committee, Board of Pharmacy,
15,000
Nearly 15,000 people die every year of overdoses involving prescription painkillers.

1 in 20
In 2010, 1 in 20 people in the US (age 12 or older) reported using prescription painkillers for nonmedical reasons in the past year.

1 Month
Enough prescription painkillers were prescribed in 2010 to medicate every American adult around-the-clock for a month.
The Problem

- Hydrocodone/acetaminophen: most commonly prescribed medication in any category
- The misuse of opioids in young women of reproductive age continues to rise.
The Problem
Tip of the Iceberg

- Opioid abuse in Tennessee is escalating.

- 2001: 9,816 admissions for substance abuse treatment
  - 762: Opiates

- 2011: 13,409 admissions for substance abuse treatment
  - 4,018: treatment of heroin or opiates

The Problem

• Substance abuse in pregnancy is common (4-16%)

• Prevalence of opioid use in pregnancy ranges from 1-21%. (Brown, et al.)

• The incidence Neonatal Abstinence Syndrome is increasing (1.2 to 3.39 per 1000, 2000-2009)

• Opioid use in first trimester of pregnancy increased from 8-20% over 2005-2009. (Tennessee)
NAS in TN: 1999-2010

Data sources: Tennessee Department of Health, Office of Health Statistics; Hospital Discharge Data System (HDDS) and Birth Statistical System. Analysis includes inpatient hospitalizations with age less than 1 and any diagnosis of drug withdrawal syndrome of newborn (ICD-9-CM 779.5). HDDS records may contain up to 18 diagnoses. Infants were included if any of these diagnosis fields were coded 779.5. Note that these are discharge-level data and not unique patient data.
Opioid Dependence in pregnancy

- High risk for unplanned pregnancy
- Lack of prenatal care
- Often chaotic lifestyle with subsequent maternal and fetal risks
- Higher incidence of abuse, incarceration, prostitution, exposure to STDs, IV drug use, etc.
- Increased medical costs and utilization of resources
<table>
<thead>
<tr>
<th>Complications of Opioid Dependence in Pregnancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Miscarriage</td>
</tr>
<tr>
<td>Preterm Labor</td>
</tr>
<tr>
<td>Preterm Premature Rupture of Membranes</td>
</tr>
<tr>
<td>Intrauterine Growth Restriction</td>
</tr>
<tr>
<td>Stillbirth</td>
</tr>
<tr>
<td>Neonatal Abstinence Syndrome</td>
</tr>
<tr>
<td>Infectious disease exposure i.e. HIV, Hepatitis C</td>
</tr>
<tr>
<td>Concomitant substance use</td>
</tr>
<tr>
<td>Psychiatric co-morbidities</td>
</tr>
</tbody>
</table>
Figure 1
Effects of opioid intoxication/withdrawal in pregnancy

Legend: IUGR=Intrauterine growth restriction; IUFD=Intrauterine fetal demise; PPROM=Prenatal preterm rupture of membranes

Young JL, Martin PR. Psych Clinics NA
Co-use of opioids and other drugs

- Tobacco abuse is 4 times higher compared to other pregnant women. (Jones, Heil)
- Tobacco exacerbates other complications of opioid use in pregnancy.
- Alcohol abuse is seen in 14% of women with opioid dependence.
- Unclear what the long-term cognitive neurobehavioral outcomes are with concomitant use.
Long-term risks to children of opioid dependent mothers

• Sudden Infant Death Syndrome

• Higher risk for neurocognitive disorders such as learning disabilities, ADHD and other behavioral problems. (Hayford, Epps)

• Long-term risk of addiction

• Unknown whether this is due to opioid exposure itself
Congenital anomalies and Opioid use

- New data suggesting association between first trimester exposure to opioids and congenital anomalies. (2011 National Birth Defects Prevention Study)
- Association with gastroschisis, spina bifida, and heart defects
- Did not measure degree of tobacco or ETOH use
- Important to answer this question due to rapidly increasing exposure during first trimester.
### Identification of women at risk for substance use

#### Options
- Universal Screening
- Validated screening tool
- Routine UDS as part of prenatal labs (controversial and not recommended without consent)

#### Validated tools for Pregnancy
- **T-ACE** (Tolerance, Annoyance, Cut down, Eye-opener)
- **AUDIT-C** (Alcohol Use Disorders Identification Test)
- **4PS PLUS** *(PARENTS, PARTNER, PAST, PREGNANCY)*
- **TWEAK** (Tolerance, Worry about drinking, Eye-opener, Amnesia, K/Cut down)
- **TQDH** (Ten Question Drinking History)
Universal Screening

- 4P’s Plus Modified Screening Tool
- Parents: Did any of your parents have a problem with alcohol or other drug use?
- Partner: Does your partner have a problem with alcohol or drug use?
- Past: In the past, have you had difficulties in your life because of alcohol or other drugs, including prescription medications?
- Present: In the past month have you drunk any alcohol or used other drugs?

- First ob visit and L&D
- Eliminates provider bias and assumptions
- Allows for early intervention and education

Box 3
Evaluation of the pregnant opioid-dependent woman

Screening for substance use
- Tobacco
- Alcohol
- Benzodiazepines
- Cocaine
- Marijuana
- Amphetamines
- Prescription drugs

Laboratory tests
- Routine prenatal labs
- Urine drug screening
- Serum blood alcohol
- HIV
- Rapid plasma reagin
- Hepatitis B surface antigen
- Hepatitis C antibody

Screening for psychiatric comorbidities
- Substance intoxication/withdrawal
- Mood disorders
- Anxiety disorders
- Eating disorders
- Adjustment disorder
- Personality traits/disorders
- Disorders due to general medical condition

Imaging
- Fetal ultrasound
Treatment of opioid dependent women

- Comprehensive treatment program
- Ob, Psychiatry, Social Work, Case Managers, Anesthesiology
- Importance and challenge of therapeutic alliance
- Improved outcomes for women who receive integrated prenatal care and substance abuse treatment. (Goler, et al.)
- Importance of education of ancillary staff.

<table>
<thead>
<tr>
<th>Box 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comprehensive treatment of opioid dependence in pregnancy</td>
</tr>
<tr>
<td>- Psychiatric management</td>
</tr>
<tr>
<td>- Prenatal care</td>
</tr>
<tr>
<td>- Social work and counseling</td>
</tr>
<tr>
<td>- Group therapy</td>
</tr>
<tr>
<td>- Case management</td>
</tr>
<tr>
<td>- Mutual support groups (e.g., Twelve-Step)</td>
</tr>
<tr>
<td>- Anesthesia consultation</td>
</tr>
</tbody>
</table>
Treatment of opioid dependence

- Opioid maintenance is standard of care. (ACOG)
- Detoxification is often not successful with 29% resuming use of street drugs. (outpatient setting)
- 12% opted for methadone maintenance after detoxification.
- 25% of detox patients had withdrawal which precipitated active labor. (Kaltenbach)
Opioid Detoxification

- Inpatient
- Taper with methadone or buprenorphine (Methadone or Buprenorphine assisted withdrawal)
- Outcomes are better for women in a residential treatment program. (Haabrecke, 2014)
The obstetrical and neonatal impact of maternal opioid detoxification in pregnancy

- Retrospective study, AJOG 2013
- 95 women
- 53 women successfully detoxed
- 5% vs. 33% treated for withdrawal (p 0.001)
- Average LOS for success -> 25 days
- Exclusion criteria: prior unsuccessful detox, IUGR, oligohydramnios, significant maternal psychiatric illness

Stewart, et al.; AJOG 2013
Benefits of Detoxification

- Greatly reduces risk of NAS
- Theoretically reduces long-term effects of opioid exposure
- Considered by many to be “true recovery”
- Decreases risk of child protective services and legal action
Disadvantages of Detoxification

- Lack of evidence based protocols
- Risk of relapse
- Shortage of drug treatment programs
- Risk of withdrawal symptoms including preterm labor, fetal demise
- Requires large degree of financial and institutional commitment
Barriers to Residential Programs

- Lack of programs
- Cost
- Lack of insurance coverage
- Few programs allow children
- Few programs allow families
Methadone Maintenance

- Gold standard with decades of experience
- Increases adherence to prenatal care
- Improves pregnancy outcomes
- Decreases severity of NAS
- Decreased foster home placement

(Winklebaur et al; Kaltenback, et al.)
Methadone Maintenance

- For women on methadone prior to pregnancy, continue current dosing. May need increase dose in 3rd trimester due to increased plasma volume.

- Initiation of methadone: Start at 10-20mg and titrate to eliminate withdrawal symptoms without producing intoxication.

- Preferably done as inpatient
Methadone disadvantages

- Daily visit to treatment center
- Cost
- Stigma
- Continued exposure to others who are using
- Incidence of NAS is still 50-66%
Buprenorphine maintenance

• Partial mu opioid agonist and full kappa opioid agonist
• Neonatal outcomes similar to methadone (MOTHER trial)
• Less severe NAS with shorter hospitalization and less morphine requirement.
• Office-based treatment
• More insurance coverage
• Feels less like being “on something.”
Buprenorphine Maintenance

• If on Suboxone, change to buprenorphine (Subutex).

• Little data on appropriate way to initiate buprenorphine during pregnancy.

• Must be in moderate withdrawal which is risky in pregnancy. Great care must be taken not to precipitate severe withdrawal.

• Must be at least 6 hours since last dose of short-acting opioid.

• Start with (2-4mg) and titrate for relief of withdrawal symptoms.
Buprenorphine Disadvantages

- No rigorous studies on initiation during pregnancy
- Often not effective for women using high doses of IV opiates.
- Higher drop out rate than methadone in MOTHER trial (33% vs. 18%) (P>0.05)
- Higher relapse rate
- Physician must obtain waiver to write rx.
Chronic pain in pregnancy

- Limited data
- Some studies suggest that NAS is less severe in this population.
- 11% NAS compared to 59% in methadone maintenance group. (Sharpe, et al.)
- Case series of women maintained on opioids for pain: NAS 38% (Hadi, da Silva, et al)
- Treatment plans must be individualized and if tapering is done must be done with caution.
# Intrapartum Pain Management: Vaginal Delivery

<table>
<thead>
<tr>
<th>Methadone</th>
<th>Buprenorphine</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Continue current dose</td>
<td>• d/c buprenorphine +/- methadone OR continue buprenorphine OR divide dose by 25% and give q6h</td>
</tr>
<tr>
<td>• Regional anesthesia</td>
<td>• Regional anesthesia</td>
</tr>
<tr>
<td>• Avoid stadol/nubaine</td>
<td>• Avoid stadol/nubaine</td>
</tr>
<tr>
<td>• PP: Schedule NSAIDS</td>
<td>• PP: Schedule NSAIDS</td>
</tr>
</tbody>
</table>
Intrapartum Pain Management: Cesarean Delivery

<table>
<thead>
<tr>
<th>Methadone</th>
<th>Buprenorphine</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Continue current dose</td>
<td>• Continue buprenorphine OR d/c buprenorphine +/- methadone OR divide</td>
</tr>
<tr>
<td>• Regional anesthesia</td>
<td>buprenorphine dose q6h.</td>
</tr>
<tr>
<td>• Local anesthetics</td>
<td>• Regional anesthesia</td>
</tr>
<tr>
<td>• PP: NSAIDS and short-acting opioids with monitoring for respiratory</td>
<td>• Local anesthetics</td>
</tr>
<tr>
<td>depression.</td>
<td>• PP: NSAIDS and short-acting opioids</td>
</tr>
</tbody>
</table>

- Methadone:
  - Continue current dose
  - Regional anesthesia
  - Local anesthetics
  - PP: NSAIDS and short-acting opioids with monitoring for respiratory depression.

- Buprenorphine:
  - Continue buprenorphine OR d/c buprenorphine +/- methadone OR divide buprenorphine dose q6h.
  - Regional anesthesia
  - Local anesthetics
  - PP: NSAIDS and short-acting opioids
Intrapartum Pain Management for Detoxed Patient

- Vaginal delivery: No change in standard of care
- Avoid Narcotics post-partum
- Cesarean Delivery: May still require increased doses of narcotics post-op due to low pain tolerance and high opioid tolerance.
- Important to discuss with patient her plans and goals for post-op pain.
Postpartum Considerations

- Plan for continued addiction treatment or pain management.
- Discourage detoxification in the immediate PP period unless in a residential program.
- High risk for PP depression.
- May get financially detoxed from methadone treatment facility.
- Social work assistance for placement may be needed.
Breastfeeding

- Breastfeeding is safe for women who are maintained on methadone or buprenorphine and should be supported unless contraindicated.
- Breastfeeding decreases severity of NAS.
- Promotes mother-infant bonding
- Increases maternal self-esteem.

(Abdel-Latif, et al.)
# Vanderbilt Obstetric Drug Dependency Clinic

- Integrated prenatal and addiction care
- Psychiatry
- Ob
- Social Services
- Nursing
- Weekly case conference
- Weekly visits until stabilization
- Biweekly visits
- Addiction group
- Counseling
- Serial growth scans

• Baron D; Garbely J, Boyd RL, Evaluation and Management of Substance Abuse Emergencies Primary Psychiatry. Volume 16, 2009


References


Questions?